

What is claimed is:

1. A method of performing a predetermined processing for an electric circuit on a circuit-constituting member by employing plasma generated by employing a high frequency electric voltage on specified 5 gases introduced into a vacuum space, comprising the step of:

starting said predetermined processing for said electric circuit on said circuit-constituting member when it is confirmed that said plasma is brought into a 10 stable condition thereof after starting of generation of said plasma.

2. The method as set forth in claim 1, further comprising the step of:

detecting a predetermined time lapse after the starting of generation of said plasma to thereby confirm 5 that said stable condition of said plasma is reached.

3. The method as set forth in claim 1, wherein said method further comprises the steps of:

transferring said circuit-constituting member from a first position where said plasma is generated to a 5 second position where said plasma is not generated before said generation of plasma is started; and returning said circuit-constituting member

from said second position to said first position when
said stable condition of plasma is reached.

4. The method as set forth in claim 2, wherein
said method further comprises the steps of:

transferring said circuit-constituting member
from a first position where said plasma is generated to a
5 second position where said plasma is not generated before
said generation of plasma is started; and

returning said circuit-constituting member
from said second position to said first position when
said stable condition of plasma is reached.

5. The method as set forth in claim 1, wherein
said method further comprises the steps of:

covering said circuit-constituting member
against a position where said plasma is generated before
5 said generation of plasma is started; and

uncovering said circuit-constituting member to
thereby expose said circuit-constituting member to said
plasma at the position where said plasma is generated
when said stable condition of plasma is reached.

6. The method as set forth in claim 2, wherein
said method further comprises the steps of:

covering said circuit-constituting member

against a position where said plasma is generated before
5 said generation of plasma is started; and

uncovering said circuit-constituting member to thereby expose said circuit-constituting member to said plasma at the position where said plasma is generated when said stable condition of plasma is reached.

7. The method as set forth in claim 3, wherein said method further comprises the steps of:

vacuumizing said first position to a predetermined low vacuum condition before said generation
5 of plasma is started;

vacuumizing further said first position to a predetermined high vacuum condition; and

implementing said returning of said circuit-constituting member from said second position to said
10 first position at the high vacuum condition.

8. The method as set forth in claim 4, wherein said method further comprises the steps of:

vacuumizing said first position to a predetermined low vacuum condition before said generation
5 of plasma is started;

vacuumizing further said first position to a predetermined high vacuum condition; and

implementing said returning of said circuit-

constituting member from said second position to said
10 first position at the high vacuum condition.

9. A method of controlling a motion of an apparatus for performing a predetermined processing for an electric circuit on a circuit-constituting member by employing plasma generated by a plasma-generation means 5 which employs a high frequency electric voltage on specified gases introduced into a vacuum space, comprising the steps of:

detecting a stable condition of said plasma by a detecting means when generation of said plasma is
10 started by said plasma generation means; and

starting said predetermined processing for said electric circuit on said circuit-constituting member when said detecting means detects that said plasma is brought into a stable condition thereof.

10. A method of controlling the motion of an apparatus for performing a predetermined processing for an electric circuit on a circuit-constituting member including a hollow plasma generative portion in which 5 plasma is generated, a hollow waiting portion for a processed object consisting of a circuit-constituting member, said portion being operatively connected to the plasma generative portion, and a member-transferring

means for supporting thereon said circuit-constituting
10 member and for transferring said processed object to each
of said waiting portion and said plasma generative
portion, said apparatus for performing said predetermined
processing for said electric circuit on said circuit-
constituting member by said plasma when said circuit-
15 constituting member is transferred by said member-
transferring means from said hollow waiting portion to
said plasma generative portion, wherein said controlling
method comprises the steps of:

positioning said circuit-constituting member
20 at said hollow waiting portion when generation of said
plasma is started in said plasma generative portion; and
transferring said circuit-constituting member
from said hollow waiting portion to said plasma
generative portion by said member-transferring means when
25 said plasma in said plasma generative portion is brought
into a stable condition thereof after the starting of
generation of said plasma.

11. A method of controlling the motion of an
apparatus for performing a predetermined processing for
an electric circuit on a circuit-constituting member
including a hollow plasma generative portion in which
5 plasma is generated, a plasma generating means for
generating plasma at a first predetermined position in

said plasma generative portion, a member-holding means
 for holding said circuit-constituting member at a second
 predetermined position opposing said first predetermined
10 position in said plasma generative portion, a member-
 coverage means for applying removable coverage to said
 circuit-constituting member between said first
 predetermined position where said plasma is generated by
 said plasma generating means and said second
15 predetermined position where said circuit-constituting
 member is held by said member-holding means, said
 apparatus for performing said predetermined processing
 for said electric circuit on said circuit-constituting
 member by said plasma, wherein said controlling method
20 comprises the steps of:

 effecting application of said coverage to said
 circuit-constituting member when generation of said
 plasma by said plasma generating means is started; and
 removing said coverage from said circuit-

25 constituting member when said plasma generated by said
 plasma generating means is brought into a stable
 condition thereof after the starting of generation of
 said plasma.

12. An apparatus for performing a predetermined
processing for an electric circuit on a circuit-
constituting member by employing plasma generated by

employing a high frequency electric voltage on specified
5 gases introduced into a vacuum space, comprising:

a plasma generating means for generating said
plasma;

a stability detecting means for detecting a
stable condition of said plasma upon being started to
10 generate by said plasma generating means; and,

a processing controlling means for controlling
start of said predetermined processing for said electric
circuit on said circuit-constituting member when said
detecting means detects said stable condition of said
15 plasma.

13. An apparatus for performing a predetermined
processing for an electric circuit on a circuit-
constituting member by employing plasma generated by
employing a high frequency electric voltage on specified
5 gases introduced into a vacuum space, comprising:

a plasma generative portion defined to have an
interior space thereof in which said plasma is generated;

a hollow member-waiting portion defined to
have an interior thereof operatively connected to said
10 plasma generative portion;

a member-transferring means for supporting
thereon said circuit-constituting member while permitting
said circuit-constituting member to be freely transferred

to said member-waiting portion and said plasma generative
15 portion;

a stability detecting means for detecting a stable condition of said plasma upon being started to generate in said plasma generative portion; and,

20 a processing controlling means for permitting said circuit-constituting member to be positioned in said hollow member-waiting portion by said member-transferring means when generation of said plasma is started in said plasma generative portion and for permitting said circuit-constituting member to be transferred from said
25 hollow member-waiting portion to said plasma generative portion by said member-transferring means when stability detecting means detects said stable condition of said plasma.

14. An apparatus for performing a predetermined processing for an electric circuit on a circuit-constituting member by employing plasma generated by employing a high frequency electric voltage on specified
5 gases introduced into a vacuum space, comprising:

a plasma generative portion defined to have an interior space thereof in which said plasma is generated;
a plasma generating means for generating plasma at a predetermined position in said plasma
10 generative portion;

a member-holding means for holding said
circuit-constituting member in said plasma generative
portion at a different position opposing said
predetermined position where said plasma is generated by
15 said plasma generating means;

a member-coverage means for removably covering
said circuit-constituting member between said
predetermined position where said plasma is generated by
said plasma generating means and said different position
20 where said circuit-constituting member is held by said
member-holding means;

a stability detecting means for detecting a
stable condition of said plasma upon being started to
generate by said plasma generating means; and,

25 a processing controlling means for permitting
said circuit-constituting member to be covered by said
member-coverage means when said plasma generating means
starts to generate said plasma, and for permitting said
member-coverage means to remove covering of said circuit-
30 constituting member when stability detecting means
detects said stable condition of said plasma.

15. The apparatus as set forth in claim 10,
further comprising a vacuum adjusting means for
adjustably varying a degree of vacuum prevailing in said
plasma generative portion, and wherein said processing

5 controlling means permits said vacuum adjusting means to produce a predetermined low vacuum condition in said plasma generative portion when said plasma starts to be generated in said plasma generative portion, said processing controlling means further permitting said
10 vacuum adjusting means to produce a predetermined high vacuum condition in said plasma generative portion before said circuit-constituting member is transferred to said plasma generative portion when said stable condition of said plasma is reached.

16. The apparatus as set forth in claim 13, wherein at least when said circuit-constituting member is transferred from said hollow member-waiting portion to said plasma generative portion, said hollow member-
5 waiting portion is held at a predetermined low vacuum condition less than a vacuum condition prevailing in said plasma generative portion.

17. The apparatus as set forth in claim 15, wherein at least when said circuit-constituting member is transferred from said hollow member-waiting portion to said plasma generative portion, said hollow member-
5 waiting portion is held at a predetermined low vacuum condition less than a vacuum condition prevailing in said plasma generative portion.

18. The apparatus as set forth in claim 12,
wherein said stability detecting means detects said
stable condition of said plasma in response to detection
of a predetermined time lapse from a start of generation
5 of said plasma.

19. The apparatus as set forth in claim 13,
wherein said stability detecting means detects said
stable condition of said plasma in response to detection
of a predetermined time lapse from a start of generation
5 of said plasma.

20. The apparatus as set forth in claim 14,
wherein said stability detecting means detects said
stable condition of said plasma in response to detection
of a predetermined time lapse from a start of generation
5 of said plasma.

21. The apparatus as set forth in claim 15,
wherein said stability detecting means detects said
stable condition of said plasma in response to detection
of a predetermined time lapse from a start of generation
5 of said plasma.

22. The apparatus as set forth in claim 16,

wherein said stability detecting means detects said stable condition of said plasma in response to detection of a predetermined time lapse from a start of generation 5 of said plasma.

23. The apparatus as set forth in claim 17, wherein said stability detecting means detects said stable condition of said plasma in response to detection of a predetermined time lapse from a start of generation 5 of said plasma.

24. An apparatus for controlling a motion of a circuit-processing performing apparatus in which a predetermined processing for an electric circuit is processed on a circuit-constituting member by plasma 5 generated by employing a high frequency electric voltage on specified gases introduced into a vacuum space, wherein said controlling apparatus comprises:

a stability detecting means for detecting a stable condition of said plasma that has started to be 10 generated; and,

a processing controlling means for starting said predetermined processing for said electric circuit to be processed on said circuit-constituting member after said stability detecting means detects said stable 15 condition of said plasma.

25. An apparatus for controlling a motion of a circuit-processing performing apparatus provided with a hollow plasma-generative portion defined to have an interior thereof in which plasma is generated, a hollow
5 member-waiting portion defined to have an interior thereof operatively connected to said interior of said plasma-generative portion, and a member-transferring means for supporting thereon a processed object consisting of a circuit-constituting member while
10 permitting said circuit-constituting member to be transferred to said member-waiting portion and said plasma-generative portion, said circuit-constituting member being processed by said plasma when said circuit-constituting member is transferred from said member-waiting portion to said plasma-generative portion,
15 wherein said controlling apparatus comprises:
a stability detecting means for detecting a stable condition of said plasma that has started to be generated in said plasma-generative portion; and,
20 a processing controlling means for permitting said circuit-constituting member to be positioned by said member-transferring means in said member-waiting portion when said plasma starts to be generated in said plasma-generative portion, and for permitting said circuit-constituting member to be transferred by said member-

transferring means from said member-waiting portion to said plasma-generative portion when said stability detecting means detects said stable condition of said plasma.

26. An apparatus for controlling a motion of a circuit-processing performing apparatus provided with a hollow plasma-generative portion defined to have an interior thereof in which plasma is generated, a plasma generating means for generating said plasma at a predetermined position in said hollow plasma-generative portion, a member-holding means for holding said circuit-constituting member in said plasma-generative portion at a position opposing said predetermined position where said plasma is generated by said plasma generating means, and a member-coverage means for removably covering said circuit-constituting member between said predetermined position where said plasma is generated by said plasma generating means and said position where said member-holding means holds said circuit-constituting member, said circuit-processing performing apparatus processing said circuit-constituting member by said plasma, wherein said controlling apparatus comprises:
- a stability detecting means for detecting a stable condition of said plasma that has started to be generated by said plasma generating means; and,

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a processing controlling means for permitting
said member-coverage means to cover said circuit-
constituting member when said plasma generating means
25 starts to generate said plasma, and for permitting said
member-coverage means to remove covering from said
circuit-constituting member when said stability detecting
means detects said stable condition of said plasma.

27. An information storage medium for storing a
program freely read by an electronic computer that
controls a motion of a circuit-processing performing
apparatus in which a predetermined processing for an
5 electric circuit is processed on a circuit-constituting
member by plasma generated by employing a high frequency
electric voltage on specified gases introduced into a
vacuum space, wherein said information storage medium
stores a program for being executed by said electronic
10 computer to thereby start processing of said
predetermined processing for said electric circuit on
said circuit-constituting member after said plasma that
has started to be generated is brought into a stable
condition.

28. An information storage medium for storing a
program freely read by an electronic computer that
controls a motion of a circuit-processing performing

apparatus provided with a hollow plasma-generative
5 portion defined to have an interior thereof in which
plasma is generated, a hollow member-waiting portion
defined to have an interior thereof operatively connected
to said interior of said plasma-generative portion, and a
member-transferring means for supporting thereon a
10 processed object consisting of a circuit-constituting
member while permitting said circuit-constituting member
to be freely transferred to said member-waiting portion
and said plasma-generative portion, said circuit-
constituting member being processed by said plasma when
15 said circuit-constituting member is transferred from said
member-waiting portion to said plasma-generative portion,
wherein said information storage medium stores
a program for being executed by said electronic computer
thereby permitting said member-transferring means
20 to position said circuit-constituting member
in said member-waiting portion when said plasma starts to
be generated in said plasma-generative portion, and
to transfer said circuit-constituting member
from said member-waiting portion to said plasma-
25 generative portion when said plasma that has started to
be generated is brought into a stable condition thereof.

29. An information storage medium for storing a
program freely read by an electronic computer that

controls a motion of a circuit-processing performing apparatus provided with a hollow plasma-generative portion defined to have an interior thereof in which plasma is generated, a plasma generating means for generating said plasma at a predetermined position in said hollow plasma-generative portion, a member-holding means for holding said circuit-constituting member in 10 said plasma-generative portion at a position opposing said predetermined position where said plasma is generated by said plasma generating means, and a member-coverage means for removably covering said circuit-constituting member between said predetermined position 15 where said plasma is generated by said plasma generating means and said position where said member-holding means holds said circuit-constituting member, said circuit-processing performing apparatus processing said circuit-constituting member by said plasma,

20 wherein said information storage medium stores a program for being executed by said electronic computer thereby permitting said member-coverage means to cover said circuit-constituting member when said plasma generating means starts to generate said 25 plasma, and to remove covering from said circuit-constituting member when said plasma that has started to be generated by said plasma generating means is brought

into a stable condition thereof.